



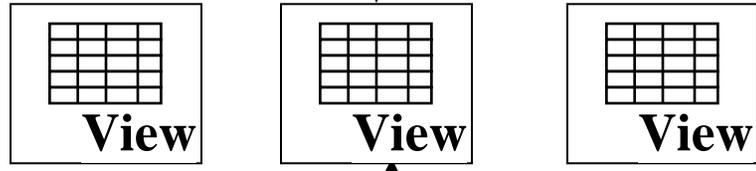
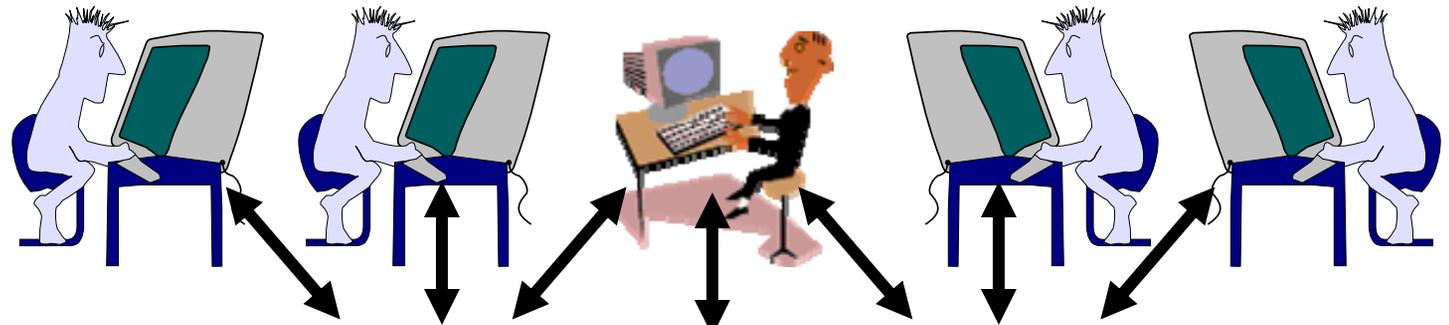
# Database Security

Duration: 2hrs

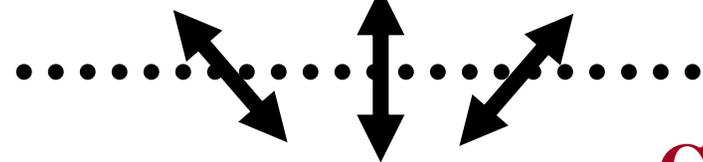
Introduction and characteristics of  
user views

# Detailed Syllabus

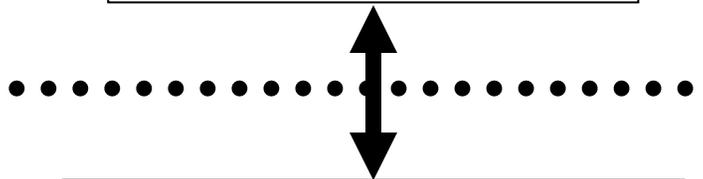
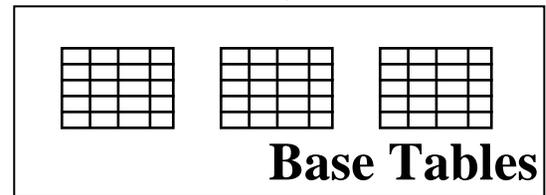
- Characteristics of user views.
- View definition and use: CREATE VIEW, DROP VIEW
- Database Security: GRANT, REVOKE



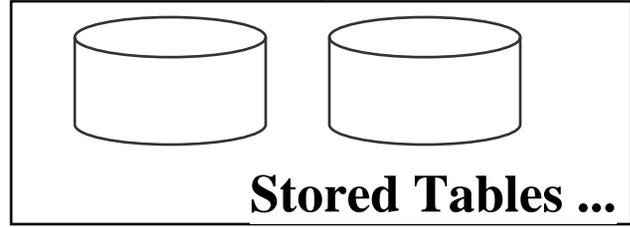
**External Layer**



**Conceptual Layer**

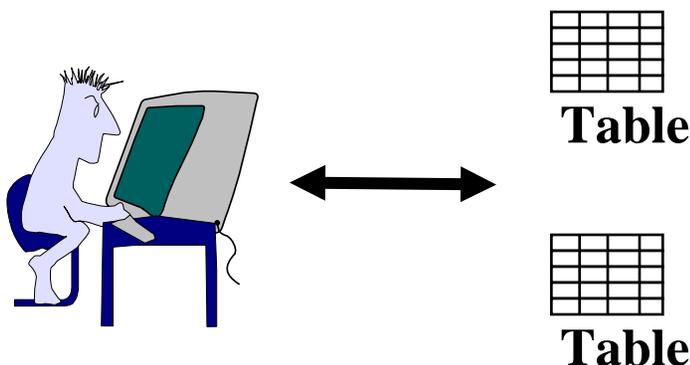


**Physical Layer**



# Architecture

## Conceptual Layer

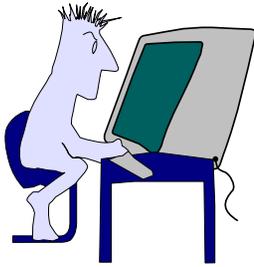


- The *conceptual model* is a logical representation of the entire contents of the database.
- The conceptual model is made up of *base tables*.
- Base tables are “real” in that they contain physical records.

# Architecture

BIT

## Conceptual Layer



### Department

Dept_Code	Dep_Name	Manager
SAL	Sales	179
FIN	Finance	857

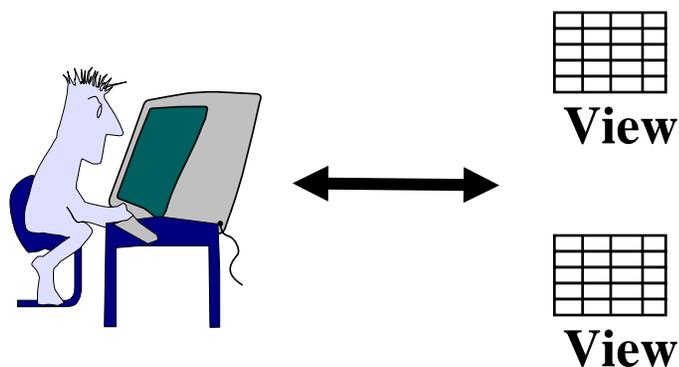
### Employee

Emp_No	Emp_Name	Designation	DOB	Dept
179	Silva	Manager	12-05-74	SAL
857	Perera	Accountant	01-04-67	FIN
342	Dias	Programmer	25-09-74	SAL

### Base Tables

# Architecture

## External Layer



- The *external model* represents how data is presented to users.
- It is made up of *view tables*. View tables are "virtual"-- they do not exist in physical storage, but appear to a user as if they did

# External Layer



## Department\_View

Dept_Code	Dep_Name	Manager
SAL	Sales	Silva
FIN	Finance	Perera

## Employee\_View

Emp_No	Emp_Name	Designation	Age	Dept
179	Silva	Manager	27	SAL
857	Perera	Accountant	34	FIN
342	Dias	Programmer	26	SAL

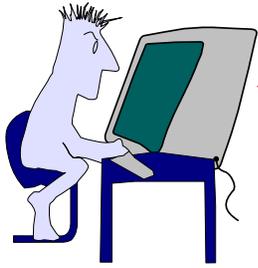
## View Tables

**Emp\_Personnel****External Layer**

<b>Emp_No</b>	<b>Emp_Name</b>	<b>Designation</b>	<b>Age</b>	<b>Dept</b>
179	Silva	Manager	27	Sales
857	Perera	Accountant	34	Finance
342	Dias	Programmer	26	Sales

**Emp\_Payroll**

<b>Emp_No</b>	<b>Emp_Name</b>	<b>Designation</b>	<b>Dept_Name</b>
179	Silva	Manager	Sales
857	Perera	Accountant	Finance
342	Dias	Programmer	Sales



# External Layer

**Emp\_Pay**

Emp_No	Emp_Name	Designation	Dept
179	Silva	Manager	SAL
857	Perera	Accountant	FIN
342	Dias	Programmer	SAL

**View Tables**

**Employee**

**Base Tables**

Emp_No	Emp_Name	Designation	DOB	Dept
179	Silva	Manager	12-05-74	SAL
857	Perera	Accountant	01-04-67	FIN
342	Dias	Programmer	25-09-74	SAL



## Emp\_Personnel

## External Layer

Emp_No	Emp_Name	Designation	Age	Dept
179	Silva	Manager	27	Sales
857	Perera	Accountant	34	Finance
342	Dias	Programmer	26	Sales

### View Tables

## Department

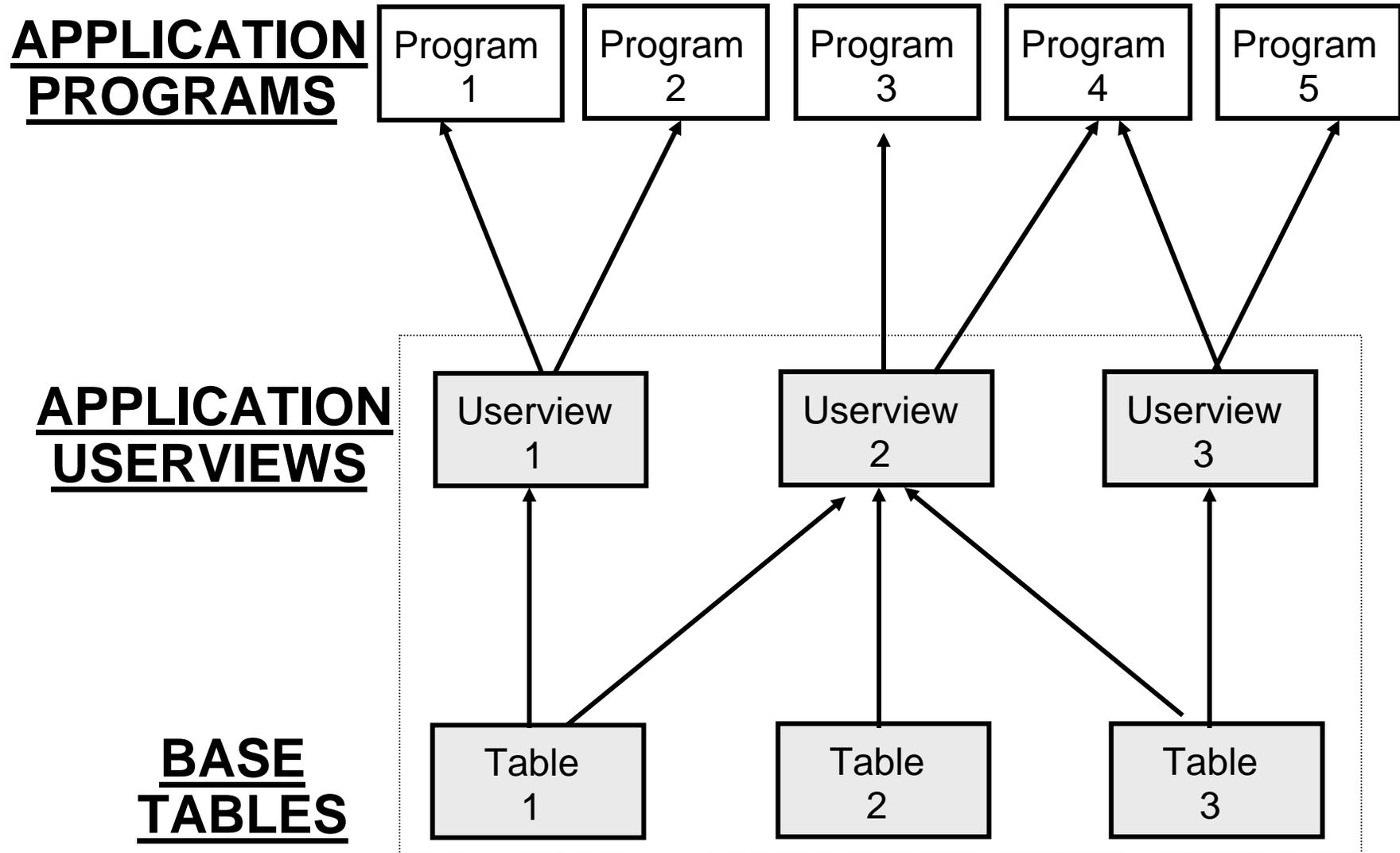
Dept_Code	Dep_Name	Manager
SAL	Sales	179
FIN	Finance	857

## Employee

Emp_No	Emp_Name	Designation	DOB	Dept
179	Silva	Manager	12-05-74	SAL
857	Perera	Accountant	01-04-67	FIN
342	Dias	Programmer	25-09-74	SAL

### Base Tables

# User view Designed for Application



# What Are User views?

*A view is a “Virtual Table”*

- *User views*
  - Derived or virtual tables that are visible to users
  - Do not occupies any storage space
- **Base Tables**
  - Store actual rows of data
  - Occupies a particular amount of storage space

# Characteristics of User views



- Behave as if it contains actual rows of data, but in fact contains none.
- Rows are derived from base table or tables from which the view is defined.
- Like base tables, views can be queried, updated, inserted into and deleted from, with restrictions.

# Characteristics of User views...



- Integrity constraints and triggers cannot be defined explicitly for views
- Usually designed for end users thus providing natural interfaces